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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/696,986	10/30/2003	Srinivasan Venkatesan	FC-124	7871
24963 7590 07/02/2007 ENERGY CONVERSION DEVICES, INC. 2956 WATERVIEW DRIVE ROCHESTER HILLS, MI 48309			EXAMINER PHASGE, ARUN S	
			ART UNIT 1753	PAPER NUMBER
			MAIL DATE 07/02/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/696,986

Applicant(s)

VENKATESAN ET AL.

Examiner

Arun S. Phasge

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 April 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Upon further considerations, claims 1-19 and 37 are hereby rejoined and fully examined for patentability under 37 CFR 1.104.

Because all claims previously withdrawn from consideration under 37 CFR 1.142 have been rejoined, the restriction requirement as set forth in the Office action mailed on 4/5/07 is hereby withdrawn. In view of the withdrawal of the restriction requirement as to the rejoined inventions, applicant(s) are advised that if any claim presented in a continuation or divisional application is anticipated by, or includes all the limitations of, a claim that is allowable in the present application, such claim may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application. Once the restriction requirement is withdrawn, the provisions of 35 U.S.C. 121 are no longer applicable. See *In re Ziegler*, 443 F.2d 1211, 1215, 170 USPQ 129, 131-32 (CCPA 1971). See also MPEP § 804.01.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-2, 4, 6-14, 17-21 and 26-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cole, U.S. Patent 4,046,654.

The Cole patent discloses the claimed method and apparatus for the electrolytic reduction of sodium chloride from an aqueous sodium chloride solution, comprising a source of electrical energy, a first container containing said sodium chloride solution, said electrolyzer producing chlorine gas, sodium metal and a deionized water (see figure 5 and claims 1-17). The Cole patent further discloses the surface of the surface of the collecting member or cathode, which forms an amalgam with the sodium, i.e., mercury and the anode comprising the same types of

materials (see col. 1, line 55 to col. 2, line 55). The patent teaches the use of the same type of membrane to prevent the flow of chloride anions to said cathode (see col. 3, lines 12-15).

The Cole patent differs from the instant invention by the removing of the sodium from the amalgam in situ, rather than the removal occurring in a second cell. The reference further discloses the reaction of the removed sodium in an air depolarizing cell electrode containing dilute sodium hydroxide to form concentrated sodium hydroxide (see figures 1, 2 and 4).

The invention as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the disclosure of the Cole patent that has an integral formation where sodium deposits onto a mercury surface as an amalgam with the separation of the sodium from the mercury surface in an integral structure to separate parts to deposit sodium as an amalgam and in a separate container to separate sodium and form the concentrated sodium hydroxide, because such modification to make separable has been well settled to be within the skill of the ordinary artisan. *In re Dulberg* 129 USPQ 148 (CCPA 1961). The use of stainless steel as the support for the mercury is disclosed by Cole in col. 3, lines 1-7). To convert this support into a continuous belt would have

been an obvious modification, because such modification to make a process continuous is within the skill of the ordinary artisan. *In re Dilnot*, 138 USPQ 248.

Claims 3 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cole as applied to claims above, and further in view of Balko et al. (Balko), U.S. Patent 4,012,297.

The Cole patent does not disclose the further use of the chlorine and sodium hydroxide formed to produce sodium hypochlorite. The Balko patent is cited to show such a technique to form hypochlorite by the reaction of chlorine gas and a sodium hydroxide containing solution (see col. 2, lines 59-65).

Therefore, the invention as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the disclosure of the Cole patent to use the products formed therein, i.e., the chlorine gas and hydroxide, because the Balko patent teaches that hypochlorite is formed by the reaction of chlorine gas and hydroxide.

Claims 5, 15-16, 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cole as applied to claims above, and further in view of Ichinose et al. (Ichinose), U.S. Patent 5,859,397.

The Cole patent apparently uses conventional power sources to provide the electricity used in the electrolytic treatment of the brine, it does not disclose that this conventional source could be a photovoltaic cell, in particular the triple cell claimed.

The Ichinose patent is cited to teach a conventional photovoltaic cell having a triple cell as claimed to produce electrolytic from the solar rays (see figures 1a and 3 and col. 1, line 43 to col. 2, line 25). Consequently, the invention as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the disclosure of the Cole patent to use another conventional power source, because the Ichinose patent teaches a conventional solar cell to produce electricity.

Conclusion

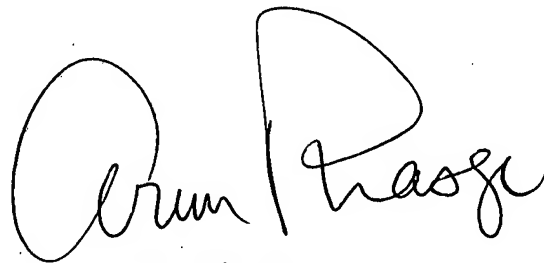
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arun S. Phasge whose telephone number is (571) 272-1345. The examiner can normally be reached on MONDAY-THURSDAY, 7:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam X. Nguyen can be reached on (571) 272-1342. The fax

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phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to read 'Arun Phasge', with a large, stylized 'P' at the end.

Arun S. Phasge
Primary Examiner
Art Unit 1753

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